LOL-HECO-IR-80

Ref: Photovoltaic (PV) generators require an extensive land area to achieve the capacity required for the Koolau/Pukele area transmission line overload problem." (Exhibit 6, page 53)

Question(s):

a. What is the area (in square miles) in the urban district in the Koolau/Pukele service area?

b. What percentage of the land would have to be covered to provide sufficient photovoltaic systems to generate 200 MW?

HECO Response:

a. It is assumed that your reference to "urban district" is in regards to the State Land Use Urban District designation. In the Koolau/Pukele service area, the approximate total land area that is a part of the State Urban District is approximately 150 square miles.

b. As noted in the Exhibit 6, page 58 (53), footnote 9, PV requires approximately 6 to 7 acres of flat land per megawatt (MW), with no exposure to salt and full exposure to the sun. Therefore, 200 MW would require 1,200 to 1,400 acres, which translates to approximately 1.9 square miles to 2.2 square mile (640 acres equals 1 square mile). This is equivalent to approximately 950 to 1,100 football fields (~0.002 square miles equals 1 football field). This is also equivalent to approximately 1.3% to 1.5% of land in the Koolau/Pukele service area that is a part of the State Urban District, assuming that the land is flat, not exposed to salt and fully exposed to the sun, and is available.